IN THE CLAIMS AMEND

Claims 1 – 158 (Cancelled)

159. (New) A composition for vaccinating a subject mammal against an infection caused by a virus, the composition comprising a modified viral polypeptide,
wherein the modified viral polypeptide corresponds to a naturally-occurring viral polypeptide, and wherein the naturally-occurring viral polypeptide possesses a target epitope that is immunogenic in a mammal other than the subject mammal, but not immunogenic in the subject mammal when encountered by natural infection,
and wherein the modified viral polypeptide, when introduced into the subject mammal, induces the production of antibodies that bind specifically to the target epitope of the naturally-occurring viral polypeptide.

160. (New) The composition of claim 159 wherein the modified viral polypeptide differs from the naturally-occurring viral polypeptide by a modification selected from the group consisting of: amino acid substitution, and amino acid addition, and amino acid deletion.

161. (New) The composition of claim 159 wherein the naturally-occurring viral polypeptide shares at least 80% primary amino acid sequence identity with the modified viral polypeptide over the length of the modified viral polypeptide, not including any terminal additions.

162. (New) The composition of claim 159 wherein the naturally-occurring viral polypeptide has a more hydrophobic end and a more hydrophilic end, and wherein the naturally-occurring viral polypeptide is modified by at least one modification selected from the group consisting of: a modification that increases the hydrophobicity of the more hydrophobic end, and a modification that increases the hydrophilicity of the more hydrophilic end of the polypeptide.

163. (New) The composition of claim 162 wherein the modified viral polypeptide forms an amphipathic helix under physiological conditions.

164. (New) The composition of claim 162 wherein the more hydrophobic end is at the amino terminal end of the polypeptide and the more hydrophilic end is at the carboxyl terminal end of the polypeptide.

165. (New) The composition of claim 159 wherein the modified viral polypeptide is less susceptible than the naturally-occurring viral polypeptide to cleavage by at least one intracellular protease.

166. (New) The composition of claim 159 wherein the naturally-occurring viral polypeptide is modified by at least one modification selected from the group consisting of: amino-terminal acetylation, carboxy-terminal amidation, amino-terminal cysteine addition, and carboxy-terminal cysteine addition.

167. (New) The composition of claim 160 wherein the naturally-occurring viral polypeptide is modified by substituting naturally-occurring amino acids with the D isomer of such amino acids.

168. (New) The composition of claim 159 wherein the modified viral polypeptide is coupled to at least one carrier molecule.

169. (New) The composition of claim 168 wherein the carrier molecule is a muralyl dipeptide.

170. (New) The composition of claim 159 wherein the virus is a retrovirus.

171. (New) The composition of claim 170 wherein retrovirus is an HIV virus.

172. (New) The composition of claim 159 wherein the subject mammal is a human.

173. (New) The composition of claim 172 the virus is a retrovirus.

174. (New) The composition of claim 173 wherein the retrovirus is an HIV virus.

175. (New) The composition of claim 174 wherein the naturally-occurring viral polypeptide is selected from the group consisting of: a Gag polypeptide, a Pol polypeptide, an Env polypeptide, and fragments thereof.

176. (New) The composition of claim 175 wherein the naturally-occurring viral polypeptide is selected from the group consisting of: Env polypeptide gp120, Env polypeptide gp41, Gag polypeptide p17, Gag polypeptide p24, Gag polypeptide p7, protease polypeptide p10, reverse transcriptase heterodimer p66/55, and fragments thereof.

177. (New) The composition of claim 174 wherein the naturally-occurring viral polypeptide of HIV is selected from the group consisting of: (a) a region extending from amino acid residue 4 through amino acid residue 27 of gp120; (b) a region extending from amino acid residue 54 through amino acid residue 76 of gp120; (c) a region extending from amino acid residue 502 through amino acid residue 541 of gp41; (d) a region extending from amino acid residue 254 through amino acid residue 295 of reverse transcriptase heterodimer p66/55; (e) a region extending from amino acid residue 69 through 94 of protease p10; (f) a region extending from amino acid residue 166 through amino acid residue 181 of gag gene protein p24; (g) a region extending from amino acid residue 390 through amino acid residue 410 of gag gene protein p7, (h) a region extending from amino acid residue 438 through 443 of gag gene protein p7; (i) a region extending from amino acid residue 69 through 94 of protease p10; (j) a region extending from amino acid residue 2 through amino acid residue 23 of gag gene protein p17; and (k) a region extending from amino acid residue 89 through amino acid residue 122 of gag gene protein p17.

178. (New) The composition of claim 174 wherein the modified viral polypeptide is a carbohydrate-depleted polypeptide.

179. (New) The composition of claim 178 wherein the modified viral polypeptide is selected from the group consisting of: (a) a carbohydrate-depleted polypeptide that corresponds to gp120, (b) a carbohydrate-depleted polypeptide that corresponds to gp41, (c) a carbohydrate-depleted polypeptide that corresponds to, (d) a carbohydrate-depleted polypeptide that corresponds to p24, (e) a carbohydrate-depleted polypeptide that corresponds to p7, (f) a carbohydrate-depleted polypeptide that corresponds to p10, (g), and a carbohydrate-depleted polypeptide that corresponds to p66/55.

180. (New) The composition of claim 159 comprising a modified viral polypeptide having a length of between about 5 and 50 amino acids.

181. (New) The composition of claim 159 comprising a modified viral polypeptide having a length of about 5 and 35 amino acids.

182. (New) The composition of claim 159 wherein the modified viral polypeptide is a synthetic peptide.

183. (New) The composition of claim 159 comprising at least two different modified viral polypeptides.

184. (New) The composition of claim 174 that, when administered to a human subject, stimulates a neutralizing immune response against the target viral epitope.

185. (New) The composition of claim 159 wherein the target epitope has an amino acid sequence that immunologically mimics a portion of a human protein.

186. (New) The composition of claim 185 wherein the human protein is selected from the group consisting of: human alpha fetal protein, aspartyl protease, deoxuridine-triphosphate nucleotidohydrolase, eosinophil cationic protein, eosinophil-derived neurotoxin and ribonuclease 4 precoursor.

187. (New) The composition of claim 159 further comprising an adjuvant.

188. (New) The composition of claim 159 further comprising a pharmaceutically acceptable carrier.

189. (New) A composition for vaccinating a subject mammal against an infection caused by a virus, the composition comprising a polynucleotide, which polynucleotide encodes the modified viral peptide of claim 159.

190. (New) The composition of claim 189 wherein the polynucleotide is a recombinant polynucleotide.

191. (New) The composition of claim 190 wherein the polynucleotide is operatively linked to an expression vector.

192. (New) The composition of claim 190 wherein the expression vector comprises a control element.

193. (New) The composition of claim 190 wherein the polynucleotide is selected from the group consisting of a deoxyribopolynucleotide, and a ribopolynucleotide.

194. (New) The composition of claim 190 wherein the polynucleotide encodes a modified viral polypeptide that corresponds to a naturally-occurring viral polypeptide selected from the group consisting of: a Gag polypeptide, a Pol polypeptide, an Env polypeptide, and fragments thereof.

195. (New) The composition of claim 190 wherein the naturally-occurring viral polypeptide shares at least 80% primary amino acid sequence identity with the modified viral polypeptide over the length of the modified viral polypeptide, not including any terminal additions.

196. (New) The composition of claim 190 wherein the naturally-occurring viral polypeptide shares at least 80% primary amino acid sequence identity with the modified viral polypeptide over the length of the modified viral polypeptide, not including any terminal additions.

197. (New) A method for the prophylactic vaccination of a subject mammal against an infection caused by a virus, the method comprising administering to the subject mammal a composition comprising a modified viral polypeptide,
wherein the modified viral polypeptide corresponds to a naturally-occurring viral polypeptide,

and wherein the naturally-occurring viral polypeptide possesses a target epitope that is immunogenic in a mammal other than the subject mammal, but not immunogenic in the subject mammal when encountered by natural infection,

and wherein the modified viral polypeptide, when introduced into the subject mammal, induces the production of antibodies that bind specifically to the target epitope of the naturally-occurring viral polypeptide.

198. (New) The method of claim 197 wherein the subject mammal is a human and wherein the virus is a retrovirus.

199. (New) The method of claim 198 wherein the retrovirus is an HIV virus.

200. (New) The method of claim 197 wherein the modified viral polypeptide differs from the naturally-occurring viral polypeptide by a modification selected from the group consisting of: amino acid substitution, and amino acid addition, and amino acid deletion.

201. (New) The method of claim 197 wherein the naturally-occurring viral polypeptide shares at least 80% primary amino acid sequence identity with the modified viral polypeptide over the length of the modified viral polypeptide, not including any terminal additions.

202. (New) The method of claim 197 wherein the naturally-occurring viral polypeptide has a more hydrophobic end and a more hydrophilic end, and wherein the naturally-occurring viral polypeptide is modified by at least one modification selected from the group consisting of: a

modification that increases the hydrophobicity of the more hydrophobic end, and a modification that increases the hydrophilicity of the more hydrophilic end of the polypeptide.

203. (New) The method of claim 197 wherein the more hydrophobic end is at the amino terminal end of the polypeptide and the more hydrophilic end is at the carboxyl terminal end of the polypeptide.

204. (New) The method of claim 197 wherein the naturally-occurring viral polypeptide is modified by at least one modification selected from the group consisting of: amino-terminal acetylation, carboxy-terminal amidation, and cysteine addition to either terminal of the polypeptide.

205. (New) The method of claim 197 wherein the encoded modified viral polypeptide corresponds to a naturally-occurring viral polypeptide selected from the group consisting of: a Gag polypeptide, a Pol polypeptide, an Env polypeptide, and fragments thereof.

206. (New) The method of claim 197 further comprising administering an adjuvant.

207. (New) The method of claim 197 further comprising administering a pharmaceutically acceptable carrier.

208. (New) The method of claim 197 wherein said administering is repeated.

209. (New) A method for the prophylactic vaccination of a subject mammal against an infection caused by a virus, the method comprising administering to the subject mammal a composition comprising a polynucleotide, which polynucleotide encodes a modified viral peptide,

wherein the modified viral polypeptide corresponds to a naturally-occurring viral polypeptide, and wherein the naturally-occurring viral polypeptide possesses a target epitope that is immunogenic in a mammal other than the subject mammal, but not immunogenic in the subject mammal when encountered by natural infection,

and wherein the modified viral polypeptide, when introduced into the subject mammal, induces the production of antibodies that bind specifically to the target epitope of the naturally-occurring viral polypeptide.

210. (New) The method of claim 209 wherein the subject mammal is a human and wherein the virus is a retrovirus.

211. (New) The method of claim 209 wherein the retrovirus is an HIV virus.

212. (New) The method of claim 209 wherein the modified viral polypeptide differs from the naturally-occurring viral polypeptide by a modification selected from the group consisting of: amino acid substitution, and amino acid addition, and amino acid deletion.

213. (New) The method of claim 209 wherein the naturally-occurring viral polypeptide shares at least 80% primary amino acid sequence identity with the modified viral polypeptide over the length of the modified viral polypeptide, not including any terminal additions.

214. (New) The method of claim 209 wherein the naturally-occurring viral polypeptide has a more hydrophobic end and a more hydrophilic end, and wherein the naturally-occurring viral polypeptide is modified by at least one modification selected from the group consisting of: a modification that increases the hydrophobicity of the more hydrophobic end, and a modification that increases the hydrophilicity of the more hydrophilic end of the polypeptide.

215. (New) The method of claim 214 wherein the more hydrophobic end is at the amino terminal end of the polypeptide and the more hydrophilic end is at the carboxyl terminal end of the polypeptide.

216. (New) The method of claim 209 wherein the naturally-occurring viral polypeptide is modified by at least one modification selected from the group consisting of: amino-terminal acetylation, carboxy-terminal amidation, and cysteine addition to either terminal of the polypeptide.

217. (New) The method of claim 209 wherein the encoded modified viral polypeptide corresponds to a naturally-occurring viral polypeptide selected from the group consisting of: a Gag polypeptide, a Pol polypeptide, an Env polypeptide, and fragments thereof.

218. (New) The method of claim 209 further comprising administering an adjuvant.

219. (New) The method of claim 209 further comprising administering a pharmaceutically acceptable carrier.

210. (New) The method of claim 209 wherein said administering is repeated.